

PATENT SPECIFICATION

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DRAWINGS ATTACHED

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(54) PACKAGE AND COVER THEREFOR

(71) We, KRAFTCO CORPORATION, formerly known as National Dairy Products Corporation, a corporation organized under the laws of the State of Delaware, United States of America, of 260 Madison Avenue, New York, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a laminated cover material and also to packages having such a cover material in which the cover is adapted to be peeled from a container cup.

A typical package with a peelable cover is a so called portion controlled package which is filled with an individual portion or serving of products such as, for example, jelly, margarine, ketchup, mustard, cheese, or peanut butter. A free edge of the cover is accessible to the consumer who grasps the cover and peels the cover from a flange on the cup. The peeling breaks the hermetic seal usually formed by heat sealing facing materials on the cover and cup. A conventional portion controlled package has a polyvinyl chloride cup and an aluminum foil cover which is coated with polyvinyl chloride and heat sealed to the cup. In many instances, the aluminum foil cover is provided with an outer layer such as regenerated cellulose which is easily decorated such as by printing or metallizing. Such polyvinyl chloride cups and aluminum foil laminate cover provide an attractive package and meet the necessary criteria that it can be capable of being mass produced and made of relatively inexpensive materials.

Although such portion controlled packages are satisfactory, the covers are subject to breaking or tearing in two, resulting in only a portion of the cover being removed from the cup. While the remaining portion of the cover may be removed by an additional peeling operation or the contents dug out from beneath the adhering cover portion, the

tearing of the cover into two pieces is a source of aggravation to the consumer who not only must perform two operations instead of one but also may accidentally contact the contents when peeling the remaining torn portion of the cover from the cup. 50

Accordingly, a general object of the invention is to provide a non-tearing cover 55 and a low cost, commercially acceptable portion controlled package of the foregoing kind.

Other objects and advantages of the invention will become apparent from the detailed description taken in connection with the accompanying drawings in which:

Figure 1 is a perspective view of a portion controlled package embodying the invention; 65

Figure 2 is an enlarged sectional view taken along the line 2—2 of Figure 1; and

Figure 3 is an enlarged, schematic cross sectional view of a laminated cover.

As shown in the drawings for purposes of illustration, the present invention is embodied very generally in a portion controlled package 11 having an individual serving cup 12 with a central chamber 13 and outwardly turned horizontal flange 14 (Figure 2). To provide a hermetic seal for the package, a laminated cover 15 is adhered to the flange 14 by a suitable adhesive or by heat sealing. The cover 15 has increased strength, as contrasted with the prior art, to prevent tearing of the cover as it is grasped at a free edge 17 (Figure 1) and peeled from the container 12. 70

In accordance with the present invention the cover 15 is not only stronger but is more easily heat sealed to the container while readily peelable therefrom without tearing into separate pieces and thereby leaving a portion of the contents covered by an adhering portion of the cover. To achieve greater resistance to tearing while providing a heat sealable material the laminated cover is formed of pre-cast film 19 (Figures 2 and 3) of polyvinyl chloride, preferably 75

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- about .00075 inches thick adhered to a layer 21 of aluminum foil. The pre-cast film is continuous and of a relatively uniform thickness as contrasted to a coating which often 5 is discontinuous or often has extremely thin areas which provide insufficient resistance to tearing.
- Conventional solution coatings for prior art covers are usually made of a mixture of 10 polyvinyl chloride and polyvinyl alcohol in a solvent such as methyl ethyl ketone or acetone in combination with toluene. The solution is applied as a very thin coating to one face of the aluminum foil and, when the 15 solvent was evaporated, the resulting vinyl polymer coating was of a relatively low molecular weight as contrasted to the higher molecular weight for the cast film 19 of the present invention. The lower molecular weight coating is, as contrasted with the 20 cast film 19, more brittle and less strong. It is difficult to obtain a uniform thickness of coating over the aluminum foil and areas of discontinuity have occurred in the coating. The lower strength of coating and its 25 non-uniform thickness contribute to formation of areas of weakness in the laminated cover, which areas are then subject to tearing.
- 30 The illustrated cup 12 is molded from a strip of polyvinyl chloride of about 0.010 to 0.015 inches in thickness when the laminated cover 15 is used with cups made of other materials such as aluminum, an adhesive or a heat 35 sealable coating is applied to the flange of the cup to hermetically seal with the cast polyvinyl chloride film 19 of the cover. It is preferred that the seal has a relatively low peel strength of about 1 lb. per linear 40 inch. The laminate cover 15 will not readily tear before peeling as the tensile or tear strength of the cover 15 is considerably in excess of the peel strength.
- A preferred method of making a portion 45 controlled package having the laminated cover 15 is as follows:
- A solution of polyvinyl chloride is cast 50 into a thin film having a thickness of 0.00075 inches to 0.001 inches when solidifying the polyvinyl chloride with evaporation of a carrier solvent such as methyl (iso) butyl ketone in combination with toluene from the solution. The cast film 19 is continuous, has a relatively uniform thickness, good 55 strength and is relatively clear. The cast film 19 is bonded to one face of aluminum foil 21, which is about .00035 inches thick, by an adhesive 23. To provide an outer surface for the cover which is more receptive 60 to printing, metallizing or other decoration than the aluminum foil, a regenerated cellulose film 25 preferably of about 0.001 inches thick may be bonded to the outer
- face of the aluminum foil layer 21 by an adhesive 27.
- After the serving is deposited in the chamber 13, the laminated cover 15 is placed on the cup with the polyvinyl chloride film 19 abutting the cup flange 14. The heat seal bond is then formed between the cast film 19 and the flange 14 by a suitable application of heat and pressure such as 120 to 180 psi. at a temperature between 270°F and 300°F. Another advantage of the cast film 19 over a vinyl coating is that it is possible to use heat sealing temperatures which are higher than 260°F usually used with solution coatings. Heat sealing pressures may range from about 120 psi. to 180 psi. and the preferred range of pressure is about 150 psi. Thus, the cover 15 eliminates some of the problems of heat sealing prior art covers to a cup.

WHAT WE CLAIM IS:—

1. A package comprising a cup made of polyvinyl chloride and having an integral peripheral flange extending outwardly about the upper edge of said cup, and a laminated cover extending across said flange and sealed thereto under heat and pressure to provide a seal for said package, said cover comprising a foil of aluminum and a pre-cast substantially continuous film of polyvinyl chloride bonded to said aluminum foil and sealed under heat and pressure to said cup flange. 85
2. A package as claimed in Claim 1 in which a film of regenerated cellulose is bonded to one surface of said aluminum foil layer by an adhesive and in which said pre-cast polyvinyl chloride film is bonded to another opposite surface of said foil layer by an adhesive. 90
3. A package as claimed in Claim 1 in which said pre-cast polyvinyl chloride film is continuous and is between 0.00075 to 0.001 inches thick. 95
4. A laminated cover material for providing a seal with a flange of a packaging cup, said cover material comprising a foil of aluminum and substantially continuous pre-cast film of polyvinyl chloride bonded to said aluminum foil. 110
5. A cover material as claimed in Claim 4 in which a regenerated cellulose film is bonded by an adhesive to one surface of said aluminum foil and said pre-cast polyvinyl chloride film is bonded to another opposite surface of said foil by an adhesive. 115
6. A cover material as claimed in Claim 4 in which said pre-cast polyvinyl chloride film is continuous and is between 0.00075 to 0.001 inches thick. 120

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FIG 1

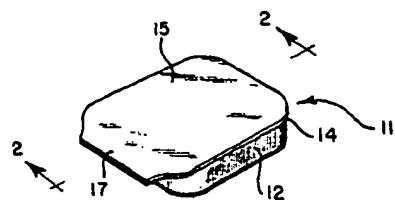


FIG.2

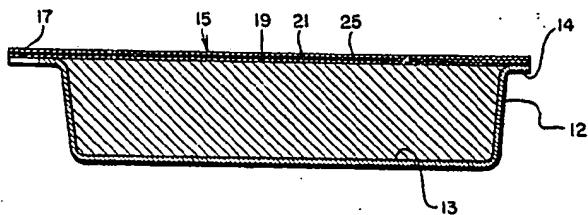
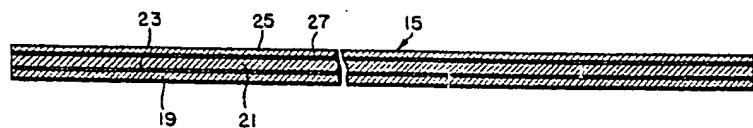


FIG.3



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